

Cedrone
Serial No. 09/780,306
Filed: 02/09/2001
Page 4

or functionality recited in the independent claims.

The Amendments Are Supported by the Specification as Filed

The claim amendments and specification amendments presented above are supported by the specification as filed. In particular, the amendments are supported by the drawings as filed. The amendments clarify the mechanical and spatial aspects of the knuckles shown in the Figures. In addition, support for the amendments may be found in the Specification at page 4, lines 21 – 22; page 5, line 17; page 7, lines 8 – 11; and page 7, lines 18 – 23.

For example, Applicant's recitation of the knuckles forming a continuous cylinder is inherent to the geometric arrangement of the opposed obliquely truncated right circular cylinders shown in the drawings and on pages 4 and 5 of the Specification. Furthermore, the statement that the bushing "separates the oblique surfaces (20, 32) while maintaining the angled relationship of the surfaces" (page 7, lines 10 – 11) provides additional linguistic support for the amendments. When a claim or specification is amended to recite the physical attributes of embodiments shown in the drawings, the drawings provide proper support for the amendment and the amendment should not be rejected as new matter. *Vas-cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1564-1565 (Fed. Cir. 1991); cited with approval in *Wang Laboratories v. Toshiba Corp.*, 993 F.2d 858 (Fed. Cir. 1993).

Claims 1, 17, and 32 Recite Design Aspects Absent from JP '767 and Suska

The Office's first rejection is contained in paragraphs 1 and 2 of the Official Action. In paragraph 2, the Office states that the independent claims are obvious in light of a combination of JP '767 and Suska. The Office's combination of JP '767 and Suska is untenable.

The Office's rejection is based solely upon a combination of the JP '767 hinge and

Cedrone
Serial No. 09/780,306
Filed: 02/09/2001
Page 5

the concept of using a bushing. Suska is cited as providing this concept. Applicant emphasizes that the Office relies upon a concept because Suska fails to disclose or suggest the oblique bushing utilized in the practice of the invention. The Office acknowledges this failure of Suska but argues that Suska's failure to disclose an oblique bushing is of no consequence because Suska would "suggest" the use of an oblique bushing to one skilled in the art. Applicant respectfully asserts that the Office's position is based entirely upon hindsight.

The Office well knows that a reference must be analyzed for all that it teaches, not just for intellectual concepts that can be plugged into any invention. A close look at Suska shows that the bushings in Suska are designed for a particular purpose that is incompatible with the claimed invention. The Office cannot simply ignore those portions of Suska that teach away from the claimed invention.

Specifically, Suska requires two cylindrical (*i.e.*, non-oblique) bushings with co-axial flanges. The bushings are placed one on top of the other with the flanges abutting. The knuckles used by Suska are specifically designed to encase these bushings (note recess 16 in FIG. 2 and col. 4, lines 14-29). The bushings, in turn, are specifically designed to provide a tight fit with the encased bushings to prevent abrasive dirt or grit from getting into the hinge and damaging the bushings. Suska, col. 4, lines 30-36.

Accordingly, if Suska teaches one skilled in the art anything, it teaches one that an open hinge system where the bushing is not encased by a knuckle sleeve (*e.g.*, a system such as the claimed invention) is undesirable because it is predisposed to abrasive failure.

The claimed invention addresses the dirt and contamination problem quite deftly. Instead of casting a complicated hinge knuckle or requiring difficult machining to ensure an encased and unadulterated bushing, with the claimed invention one does not need to worry about dirt and grime. If the bushing becomes dirty or needs to be changed for any other reason, all one must do is lift off the upper knuckle and slide on a new bushing. Specification, page 7, lines 19-24. This is impossible with Suska's hinge. Accordingly,

Cedrone
Serial No. 09/780,306
Filed: 02/09/2001
Page 6

Suska leads one skilled in the art away from the design that is recited in the claimed invention.

As mentioned in Applicant's previous response, the Office must consider the engineering aspects of Suska's bushings. Applicant's position is that one cannot simply ignore the perpendicular (*i.e.*, non-oblique) design of Suska's bushing. The design of the Suska bushing is integral to its function and completely incompatible with the JP '767 hinge. Rather than repeating these arguments Applicant refers the Office to its previous response.

Likewise, the Office cites the drawings shown JP '767 for the concept of a gravity hinge without looking at the structural differences between the JP '767 hinge and the recited invention and the critical functional differences that result from those differences.

Although the drawings in JP '767 generally suggest a hinge that can use the force of gravity to assist in returning to a closed position, a close examination of the JP '767 hinge shows that it is clearly designed to stay open rather than close automatically and is therefore not a true gravity hinge. The lower knuckle (8) of the JP '767 hinge has an upper terminating surface (12a) that is not continuously opposed with the lower terminating surface of the upper knuckle (13). Instead, lower knuckle upper terminating surface (12a) has at least one portion (12c) that is perpendicular to the vertical axis of the hinge (alternatively, a portion that is horizontal in normal view). This portion also contains a groove to trap the bottom portion of upper knuckle surface 13 and prevent the upper knuckle from rotating closed under the force of gravity. JP '767 FIG. 4. This portion (12c) also serves to create a gap between the upper and lower knuckles when the knuckles are in a closed position. In other words, the oblique surfaces of the JP '767 hinge are not in continuous radial contact (*i.e.*, contact across any radius).

Applicant's recitation of the fact that the bushing and the oblique surfaces of the knuckles are in continuous radial contact to form a continuous cylinder serves to highlight the fact that the claimed invention does not have a flat surface corresponding to portion (12c); does not have a gap between the upper and lower knuckles; and is designed to

Cedrone
Serial No. 09/780,306
Filed: 02/09/2001
Page 7

automatically close regardless of the position of the upper knuckle. This explanation of the amendment, in conjunction with the drawings, clearly distinguishes the claimed invention from the JP '767 reference.

In summary, for one to achieve the claimed invention from the Office's combination, one would have to (1) ignore Suska's teaching against non-enclosed bushings, (2) use Suska as a basis for adding an oblique bushing to the JP '767 hinge even though the JP '767 hinge is not designed for a bushing, (3) redesign Suska's bushing from a perpendicular cylinder to an oblique slice from a cylinder, then (4) redesign the JP '767 hinge to remove the grooved horizontal portion thus destroying the purpose of the JP '767 hinge. Applicant respectfully submits that the probability of such a scenario occurring is fanciful and provides objective evidence that the Office's obviousness rejection is untenable and is based upon hindsight reconstruction of the claimed invention.

Finally, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (CCPA 1974); MPEP § 2143.03. Neither reference discusses or suggests oblique surfaces in continuous radial contact or the resulting continuously cylindrical form of the recited hinge. Accordingly, the obviousness rejection based upon JP '767 and Suska should be removed.

Combining Suska and Rhodes Fails to Achieve the Claimed Invention

Paragraph 3 of the Official Action rejects independent Claims 1 and 17 in view of the combination of Suska and Rhodes. Applicant notes that independent Claim 32 is not rejected pursuant to this combination and is allowable upon removal of the preceding rejection based upon JP '767 and Suska. Again, the Office's rejection is based upon morphing a hinge to include a bushing based upon a concept derived from Suska. Again, the Office's rejection is untenable.

Turning now to the references, the weaknesses of Suska and its bushing are outlined in the preceding section and are equally applicable here. Briefly, the Examiner must accept

Cedrone
Serial No. 09/780,306
Filed: 02/09/2001
Page 8

Suska for all that it teaches and Suska's enclosed perpendicular bushing is incompatible with the Rhodes hinge and leads one away from the recited hinge.

One of the inventive aspects of the claimed invention is its simplicity, which has been highlighted by incorporating the transitional phrase "consisting essentially of." When one compares the Rhodes hinge cited by the Office (Rhodes FIG. 3) with the claimed invention, the differences between the two are readily apparent. The most obvious difference is that the Rhodes hinge is far more complicated than the claimed invention.

The factor complicating the Rhodes hinge is that it is designed to provide a sealed hinge that fixes the knuckles into position. Applicant specifically notes aperture 36 which is used to provide lubrication to the rotating portions of the hinge and the dowel pin 26, grub screw 35 and cap 34 which secure the knuckles and prevent removal of the upper knuckle. In contrast, the claimed invention provides a much simpler hinge in which the upper knuckle is not fixed in place but can be removed by simply lifting off the knuckle. Specification, page 7, lines 18 - 23. This allows easy replacement of the self-lubricating bushing, which eliminates the need for the messy lubricants required by Rhodes.

Given that Rhodes incorporates lubrication into its design, neither the references nor the Office provide any basis for the Office's position that one skilled in the art would think that friction is a problem with the Rhodes hinge requiring the insertion of any bushing, much less the perpendicular bushing of Suska. Applicant respectfully submits that one skilled in the art would not substitute Rhodes' lubricant system with a bushing system because the manner in which the Rhodes hinge is put together makes replacing a bushing quite difficult. One would have to remove grub screws, sleeves, caps, dowel pins, etc., to replace a bushing in the Rhodes' hinge. For a complicated design such as Rhodes', squirting lubricant into a hole on a regular basis makes much more sense than disassembling the entire hinge to replace a bushing.


In short, the combination of Suska and Rhodes fails to discuss or suggest the claimed invention. Furthermore, Suska and Rhodes are mechanically incompatible and no motivation exists for modifying the Rhodes reference.

Cedrone
Serial No. 09/780,306
Filed: 02/09/2001
Page 9

Conclusion

In light of the foregoing amendments and arguments Applicant respectfully asserts that the Office's rejections are no longer applicable. Applicant also respectfully asserts that the claims are in condition for immediate allowance and should proceed to allowance forthwith.

Respectfully submitted,



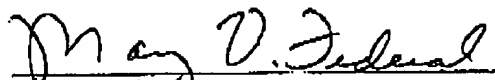
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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being transmitted by facsimile to the Assistant Commissioner for Patents to the attention of Examiner Alison K. Pickard at Fax No. 703-872-9327 November 13, 2002.

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Cedrone
Serial No. 09/780,306
Filed: 02/09/2001
Page 10

Marked-Up Amendments

In the Specification:

Please amend the paragraph beginning at page 5, line 20 as follows:

A spindle 30, which is received by at least one of the two knuckles, establishes rotating communication between the upper and lower knuckles. Stated alternatively, the spindle 30 rotatably engages the upper and lower knuckles 16, 24 such that the oblique terminating surfaces 20, 26 are proximate to each other. As shown in FIGs 1 and 3, when the two knuckles are in a resting position, the two knuckles (which resemble two halves of an obliquely sliced right circular cylinder) and the bushing are in continuous radial contact (i.e., they are in contact along any radius) and form a continuous cylinder.

In the claims:

Please amend Claims 1, 17, and 33 as follows:

1. (Twice Amended) A gravity hinge [comprising] consisting essentially of:
an upper cylindrical knuckle having a first terminating surface and an opposing second terminating surface oblique to the axis of said upper knuckle;
a lower cylindrical knuckle having a first terminating surface and an opposing second terminating surface
wherein said first terminating surface of said lower cylindrical knuckle is oblique to the axis of said lower knuckle and is at the same angle as said second surface of said upper knuckle [and an opposing second terminating surface];
an oblique bushing separating said upper and lower knuckles, said bushing having the same angle as said second terminating surface of said upper knuckle and said first terminating surface of said lower knuckle; and

Cedrone
Serial No. 09/780,306
Filed: 02/09/2001
Page 11

a spindle received by at least one of said knuckles and said bushing, wherein said spindle [establishing] establishes rotating communication between said upper and lower knuckles [where said second terminating surface of said upper knuckle is opposed to said first terminating surface of said lower knuckle;] and allows said upper knuckle to be lifted off said bushing;

[an oblique bushing surrounding said spindle and separating said upper and lower knuckles,]

wherein said bushing [having] has a lower coefficient of friction with respect to said respective oblique surfaces of said upper and lower knuckles than said respective surfaces have for each other and wherein said bushing and said knuckles form a continuous cylinder when said knuckles are in a resting position.

17. (Twice Amended) A gravity hinge [comprising] consisting essentially of:
an upper cylindrical knuckle having a terminating surface that is oblique to the vertical axis of said upper knuckle;

a lower cylindrical knuckle having a terminating surface that is oblique to the vertical axis of said lower knuckle and at substantially the same angle as said upper knuckle terminating surface;

a spindle for rotatably engaging said upper knuckle with said lower knuckle [such that said oblique terminating surfaces of each knuckle are proximate to each other;] and allowing said upper knuckle to be lifted off said lower knuckles; and

an oblique self-lubricating friction reducer surrounding said spindle and physically separating said knuckles wherein said self-lubricating friction reducer and said knuckles form a continuous cylinder when said knuckles are in a resting position.

33. (Amended) A gravity gate [comprising] consisting essentially of:
a static structure;

Cedrone
Serial No. 09/780,306
Filed: 02/09/2001
Page 12

a lower cylindrical knuckle attached to said static structure, said lower knuckle having a first terminating surface oblique to the axis of said lower knuckle and an opposing second terminating surface;

an upper cylindrical knuckle having a first terminating surface and an opposing second terminating surface oblique to the axis of said upper knuckle at the same angle as said first surface of said lower knuckle;

a spindle for rotatably engaging said upper knuckle with said lower knuckle such that said oblique terminating surfaces of each knuckle are proximate to each other;

a bushing surrounding said spindle and separating said upper and lower knuckles, said bushing having a lower coefficient of friction with respect to said respective oblique surfaces of said upper and lower knuckles than said respective surfaces have for each other, wherein said bushing and said knuckles form a continuous cylinder when said knuckles are in a resting position; and

a frame member attached to said upper knuckle.